

# Billing for pacemakers and electrophysiological procedures

A cardiologist's perspective on fee structures by Anthony Stanley.

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All procedures involve intimate and detailed knowledge of the cardiac anatomy. This is generated with high end echocardiography and CT/MRI scanning. The latter requires knowledge of radiographic anatomy. Intra-cardiac echocardiography is often required.

Multiple catheters are manipulated within the heart while constantly assessing the cardiac signals recorded by the catheters and their temporal relation to one and other. This requires a unique cognitive process.

A further aid, which extends the cognitive global awareness, is the generation of three-dimensional virtual models using CARTO or Ensite systems. This virtual model can be "merged" with the CT image. The catheter can then be moved in real time within this virtual anatomy.

An extension of this, in the Ensite system, is the use of the multi electrode array balloon. This enables the simultaneous recording of electrical signals from thousands of points on the endocardial surface, enabling detailed mapping of a stable tachycardia or even a single ectopic beat.

From this brief discussion it can be appreciated that electrophysiology and ablation generally require a level of cognition which is greater than that of other cardiac procedures. The procedures are time intensive.

The process used in generating a fee is detailed below. Initially a code has to be developed. This is usually alphanumeric. South African Medical Association (SAMA) codes are four digits long whereas the American Medical Association's Current Procedural Terminology (CPT®) system is seven. The international trend is for codes to be hierarchical. The denominator of the hierarchy is usually anatomical. For example, the heart would be the highest level followed by pericardium, myocardium, endocardium. Lower levels would be valves and further subdivided into valvar, paravalvar and subvalvar. At the current time the SAMA levels are not hierarchical.

**ABSTRACT** Due to the rapid expansion of electrophysiological procedures, fee structures have become complex. In order to simplify this structure it is proposed that fees be charged on a per-procedure basis. This will result in a better system less prone to inappropriate use. It will also aid funding of the procedures with a smaller chance of a ballooning cost for that procedure. A degree of risk sharing will make procedures more streamlined.

SAHeart 2008; 5:181-183

Electrophysiology and Pacing are highly specialized areas of cardiology. Practitioners are highly trained and have spent a long time in training. They operate in a sophisticated technological environment.

The areas of practice can be subdivided as follows:

- Heart failure management
- Right atrial procedures
- Left atrial procedures
- Right ventricular procedures
- Left ventricular procedures

A descriptor would then be added. A short and a long descriptor are used. These have to be carefully worded and must lack ambiguity. The descriptors will be used to arbitrate as to what procedure deserves which code. A set of coding rules then has to be developed to guide the use of codes. Again these must lack ambiguity!

Once this has been done each procedure is given a relative value. This is based on the time it takes to perform the procedure and the complexity of the procedure. Cognitive and interpretive skills are taken into account as well as the training required. Large databases have been developed and have assigned relative values to all procedures, both cardiac and noncardiac. The largest is held by the American Medical Association and forms the basis of the CPT4 system. This results in a unit value for the procedure.

A conversion factor is then applied to adjust the fee to one which takes into account the costs involved in providing the service. This will be decided by the practice cost studies which have been completed. The conversion factor is then multiplied by the unit developed by the relative value process. Practitioners should be allowed, in a free market economy, to assign their own conversion factor based on their cost of providing the service and a fair profit.

New coding structures are being investigated in order to allow the gathering of information on the cost of treating various diagnostic groups. This will enable better management of costs by funders, administrators and legislators.

The amendments to the South African National Health Act will take most control of the scope of practice out of the hands of the medical practitioners. Fees will be decided by negotiation, but if consensus cannot be reached, the fee will be set by the Minister of Health. This will be final and fees will have to be charged at this level.

Another factor which may influence billing is the proposed relegation of legislation, surrounding the scope of practice, to the level of regulations. This would mean that the Minister would be able to rule on the scope of practice without this passing through Parliament.

This will take time. In the interim we should use the existing system. In pacing this is relatively simple as the existing codes cover the procedures

fairly comprehensively. An exception would be the left ventricular lead placement for cardiac resynchronization therapy.

In electrophysiology the system is more complex, with the introduction of procedures requiring the use of many codes to cover one procedure. Some procedures do not have codes. An example is the use of 3D mapping. As a result, this highly complex procedure is often not billed separately.

A poll of practising electrophysiologists was carried out to ascertain which codes were used in the group of electrophysiological and pacing procedures. This indicated that all practitioners use a fairly standard list of procedure codes to cover each of the major procedures performed by electrophysiologists. The list of these procedures and codes is shown in Table 1.

The essential feature is that practice costs of electrophysiologists or pacemaker implanters are generally higher than those of general cardiologists. For example, a vascular interventional cardiologist requires rooms and a treadmill and a good basic echocardiographic machine, whereas a cardiologist implanting CRT devices needs in addition to assess regional dyssynchrony as an absolute requirement for the placement of the LV lead and indeed the need for biventricular pacing. This requires a high-end echocardiographic machine.

**TABLE 1:** Possible combinations of codes to be used for electrophysiological procedures.

Electrophysiological procedure or ablation	SAMA procedure codes (used in combination)	Additional codes that may be required
1. Routine EPS	1257,1262,1275	3636/7, 1247,
2. Atrial Flutter	1257, 1262,1261, 1275	NavX, Carto,
3. AVNRT	1257,1261,1262,1275	NavX, Carto
4. AVRT	1257,1261,1262,1275	NavX/Carto
5. Atrial tachycardias	1257,1261,1262,1275	NavX/Carto
6. Atrial Fibrillation	1257,1261 x 4,1262 x 2	3636/7,1247,1251 x 2, NavX, Carto, 1293
7. Ventricular Ectopics-Right	1257,1261,1262,1275	3636/7,1356, NavX, Carto, 1293
8. Ventricular Ectopics-Left	1257,1262,1262,1275	3636/7,1356,NavX, Carto, ?1252
9. Ventricular Tachycardia-Right	1257,1261,1262,1275	3636/7,1356,NavX, Carto, 1293
10. Ventricular Tachycardia-Left	1257,1261,1262,1275	3636/7,1356,NavX, Carto, ?1252
11. Epicardial Ablation – coronary sinus	1257,1261,1262,1275	3636/7,1356, NavX, Carto
12. Epicardial Ablation-subxiphoid	1257,1261,1262,1275,1248	3636/7,1356, NavX, Carto, 3621/2

These were based on a survey undertaken amongst practising electrophysiologists regarding fees for electrophysiological procedures. (NavX and Carto refer to 3D-mapping.)

The need for billing guidelines is obviously urgent and imperative. One solution would be to develop a global fee per condition. For example an ablation for paroxysmal atrial fibrillation would be set at a unit value whereas the global fee for permanent atrial fibrillation would have a higher unit value. The rand value of a unit would be set by negotiation with funders and take into account the true cost of providing that service. The essential feature is that the procedure to treat a particular condition would be defined and would not balloon as more modalities are added to the procedure. This would involve shared risk. For example if the procedure to position a LV lead required a venogram to define coronary sinus anatomy this would be covered by the global fee.

## **CONCLUSION**

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In essence the proposed system will allow a more comprehensive approach to billing in electrophysiological procedures. Risk sharing will ensure best practice and may shorten hospital procedure times. A system of adding new codes, as new procedures become available, must be formalized. The unit value of each procedure will have to be carefully calculated to ensure fair remuneration for these complex procedures. However, we live in times of tremendous change! Our country needs to provide these services to all members of the population. This obviously requires a radical change in our billing practices, coding structures and indeed the way we practice medicine. It will require us to work together with all members of the medical community (funders, administrators, planners and educators) to achieve this utopian goal.